

Achievement Standard

Subject Reference Science 1.12

Title Investigate the biological impact of an event on a New Zealand ecosystem

Level 1 **Credits** 4 **Assessment** Internal

Subfield Science

Domain Science - Core

Status Registered **Status date** 30 November 2010

Planned review date 31 December 2014 **Date version published** 30 November 2010

This achievement standard involves investigating the biological impact of an event on a New Zealand ecosystem.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Investigate the biological impact of an event on a New Zealand ecosystem. 	<ul style="list-style-type: none"> Investigate, in depth, the biological impact of an event on a New Zealand ecosystem. 	<ul style="list-style-type: none"> Investigate, comprehensively, the biological impact of an event on a New Zealand ecosystem.

Explanatory Notes

- This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 6. It is aligned with the Ecology achievement objective in the Living World strand, and is related to the material in the *Teaching and Learning Guide for Science*, Ministry of Education, 2010 at <http://seniorsecondary.tki.org.nz>.
- This investigation involves collecting information about the biological impact of an event on a New Zealand ecosystem. The information could come from a variety of sources such as direct observations, collection of experimental data, resource sheets, photos, videos, websites, and reference texts.

The procedures outlined in *Safety and Science: A Guidance Manual for New Zealand Schools*, Learning Media, Ministry of Education, 2000, must be followed during any practical component investigation.

- 3 *Investigate* involves describing observations or findings, using those findings to identify changed environmental factors, and describing how the changed environmental factors might affect organisms within the ecosystem.
- 4 *Investigate in depth* involves using findings and biological ideas to make causal links between changed environmental factors and the ecological characteristic or process to explain the impact on organisms or implications for the ecosystem as a whole.
- 5 *Investigate comprehensively* involves using findings and biological ideas to make significant causal links between changed environmental factors and the ecological characteristic or process to discuss:
- the impact on the organisms, and
 - the implications for the ecosystem as a whole.
- It may involve explaining, elaborating, applying, justifying, relating, evaluating, comparing and contrasting, and analysing.
- 6 *An event* may include natural events such as floods, drought, seasonal changes, landslides and fire; or human actions such as pest control, application of fertilisers, trampling, urbanisation, or pollution.
- 7 Environmental factors about which information is collected may include: moisture levels, light intensity, temperature, stream clarity, food availability, competition, predation, wave and wind action, shelter, and oxygen levels.
- 8 Ecological characteristics and processes may include: food chains/webs, variety of organisms (diversity), nutrient cycles, water cycle, energy flow, interrelationships (predation, parasitism, mutualism), density, distribution pattern, and key species.
- 9 Conditions of Assessment related to this achievement standard can be found at www.tki.org.nz/e/community/ncea/conditions-assessment.php.
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Quality Assurance

- 1 Providers and Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against achievement standards.
- 2 Accredited providers and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Accreditation and Moderation Action Plan (AMAP) reference

0233